

Work Order ID 61811

Tuesday, September 07, 2010 12:41:08 PM

Page 1

Item ID: D4102-1

Accept

Setup Start

Revision ID:

Stop

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Cust Item ID:

Required Date: 10/13/2010 Req'd Qty: 10.00

Customer:

Reference:

Approvals:

Process Plan:

Date: 10-9-07

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr	Revision Nbr
D4102	B

100

Cut blanks as per folio

0.00



Bandsaw

Memo

0.00

Jeaspa Bandsaw

4.950" long

amb 10/09/26

12 0

110

0.00



HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

MILL AS PER DWG AND FOLIO FA945

FOLIO REV: B

DWG REV: B

DEBURR

M.A 10/09/27

LF 10/09/28

12 1

NCR →

PTO

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D4102-1 PAR #: _____ Fault Category: machining NCR: Yes No DQA: ✓ Date: 10/10/09
 Resolution: (1) SCRAP / (2) accepted Disposition: (1) SCRAP / (2) USE AS IS QA: N/C Closed: ✓ Date: 10/07/2010

NCR: <u>61811</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
(1) 10/09/27	110	-machined part is the wrong version of pattern. -engineering has not notify about changes before w/o was released	<u>✓</u> 10/09/27	-program has been updated	<u>H.A</u> 10/09/27	<u>aml</u> 10/09/30	<u>✓</u> 10/09/28	<u>✓</u> 10/09/28
		-program was not updated.	<u>✓</u> 10/09/27	- Attempt to re-machine the pocket per drawing, to save the part. <u>Not machinable & 10/09/27</u>	<u>N/A</u> →	Parts could not be remachined due to contour change. <u>10/09/28</u>	<u>✓</u> 10/09/28	<u>✓</u> 10/09/28
(2) 10/09/28	110	Two parts are affected by one dimension under Tolerance. $.130" \pm .005$ Actual dimension $.113" \pm .015$ R.C. Process.	<u>GP</u> 10/09/28 <u>✓</u> 10/09/28	No replace. No more material. Acceptable.	<u>GP</u> 10/09/28	<u>aml</u> 10/09/30	<u>GP</u> 10/09/28 <u>✓</u> 10/09/28	<u>✓</u> 10/09/28

NOTE: Date & initial all entries

Work Order ID 61811

Tuesday, September 07, 2010 12:41:08 PM

Page 2

Item ID: D4102-1

Accept

Revision ID:

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Required Date: 10/13/2010 Req'd Qty: 10.00

Reference:

Cust Item ID:




Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120  QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo □□	0.00 0.00	B.A 10/09/27			12			
130  QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00	amk 10/09/30			12			
140  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00	JH 10/10/01			12	0		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 61811

Tuesday, September 07, 2010 12:41:08 PM

Page 3

Item ID: D4102-1

Accept

Setup Start

Revision ID:

Stop

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Cust Item ID:

Required Date: 10/13/2010 Req'd Qty: 10.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC3- Inspect Part Finish

0.00

BR 10-10-1



QC

Memo

0.00

Quality Control

12

φ

160

Identify as per dwg & Stock Location 125

0.00



Packaging

Memo

0.00

Packaging

10/10/4

SL

PO

170

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/10/04

ME

10-10-04

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, September 07, 2010 12:41:12 PM

Page 1

Work Order ID: 61811



Parent Item: D4102-1



Parent Item Name: SHIM

Start Date: 9/7/2010

Required Date: 10/13/2010

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 10-07-05 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.250X04.00 0		Purchased	No			100	f	15.8670	0.042	0.442105			



6061-T6 Bar .250 x 4.00

Location

Loc Qty

Loc Code

MAT

114608

15.866978

15.866978

5.197 gms 10/09/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

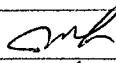
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 61811
Description: SHIM		Part Number: D4102-1
Inspection Dwg: D4102	Rev: B	Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

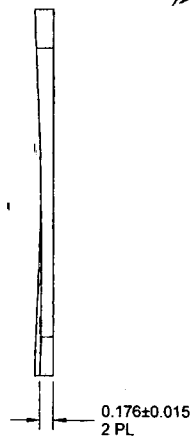
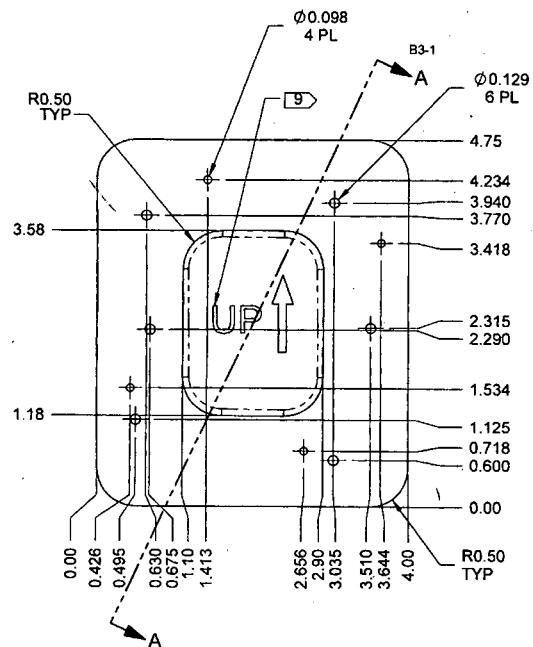
Drawing Dimension	ACTUAL DIMENSIONS	TOLERANCES	Accept	Reject	Method of Inspection	Comments
0.426	0.429	+/- .010	✓		vern	GA-01
0.495	0.498	+/- .010	✓		"	"
0.630	0.633	+/- .010	✓		"	"
0.675	0.678	+/- .010	✓		"	"
1.10	1.103	+/- .030	✓		"	"
1.413	1.416	+/- .010	✓		"	"
2.656	2.659	+/- .010	✓		"	"
2.90	2.903	+/- .030	✓		"	"
3.035	3.038	+/- .010	✓		"	"
3.510	3.513	+/- .010	✓		"	"
3.644	3.647	+/- .010	✓		"	"
4.00	4.012	+/- .030	✓		"	"
0.600	0.600	+/- .010	✓		"	"
0.718	0.718	+/- .010	✓		"	"
1.125	1.125	+/- .010	✓		"	"
1.534	1.534	+/- .010	✓		"	"
2.290	2.290	+/- .010	✓		"	"
2.315	2.315	+/- .010	✓		"	"
3.418	3.418	+/- .010	✓		"	"
3.370	3.370	+/- .010	✓		"	"
3.770	3.770	+/- .010	✓		"	"
3.940	3.940	+/- .010	✓		"	"
4.234	4.234	+/- .010	✓		"	"

Measured by: B.A	Audited by: 	Preliminary Approval:
Date: 10/09/27	Date: 10/09/30	Date:

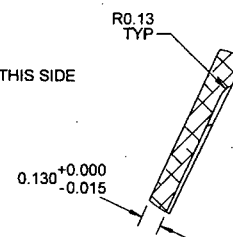
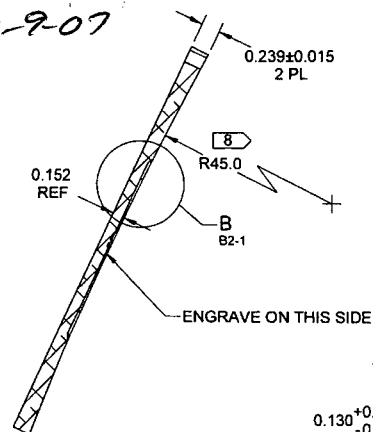
Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

SHOW COPY
RETURN TO
ENGINEER:
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 41811
B-10-207



SECTION A-A D6-1



DETAIL B C3-1
SCALE 2X

D4102-1 SHIM



RELEASED
2010-08-23
NO

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
PER DART SPEC. M6061T68
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-1" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.30 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH
- 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

B	RE-DESIGN D4102-1/2-3 (ZN B4-1, B4-2, B4-3)	RF	10.08.06
A	NEW ISSUE	RF	10.06.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D4102	SHEET 1 OF 3
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	SHIM	NTS
DATE	10.08.06	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

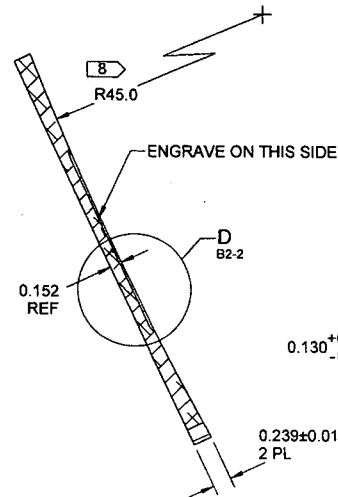
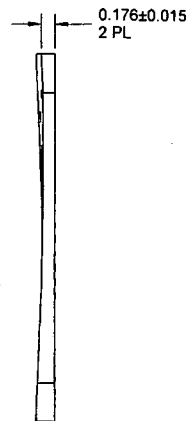
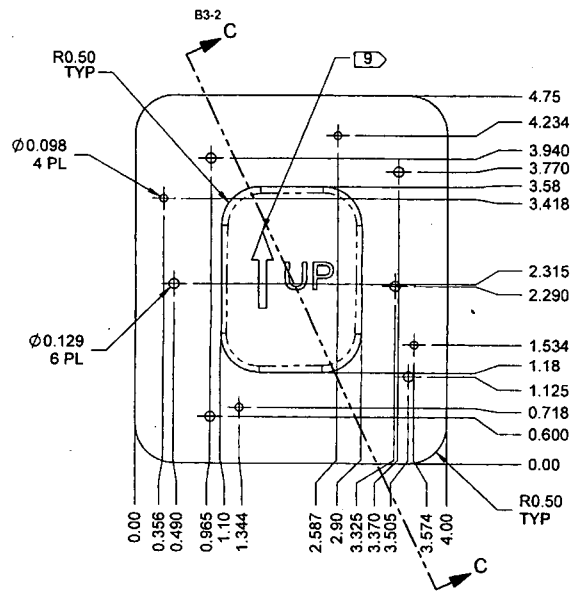
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

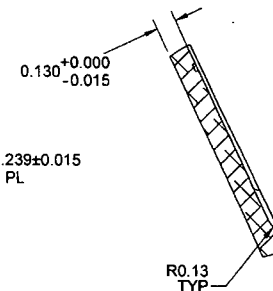
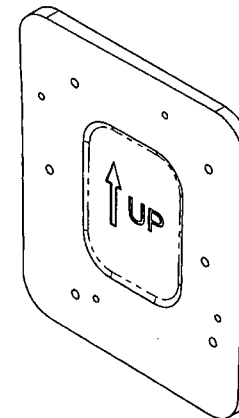
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



SECTION C-C D7-2



DETAIL D C3-2
SCALE 2X

D4102-2 SHIM



NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
PER DART SPEC. M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-2" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.30 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH
- 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

RELEASED
2010-08-23

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D4102	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SHIM	NTS
DATE	10.08.06	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

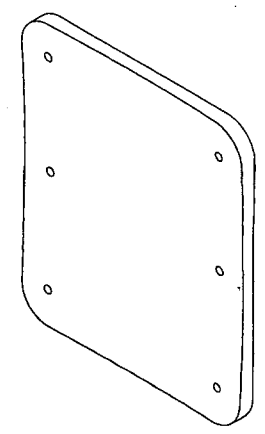
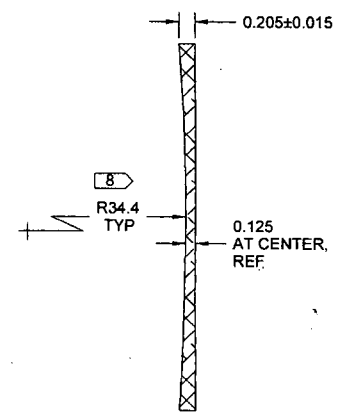
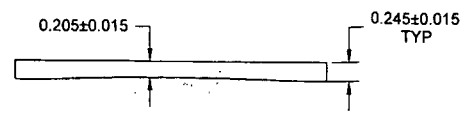
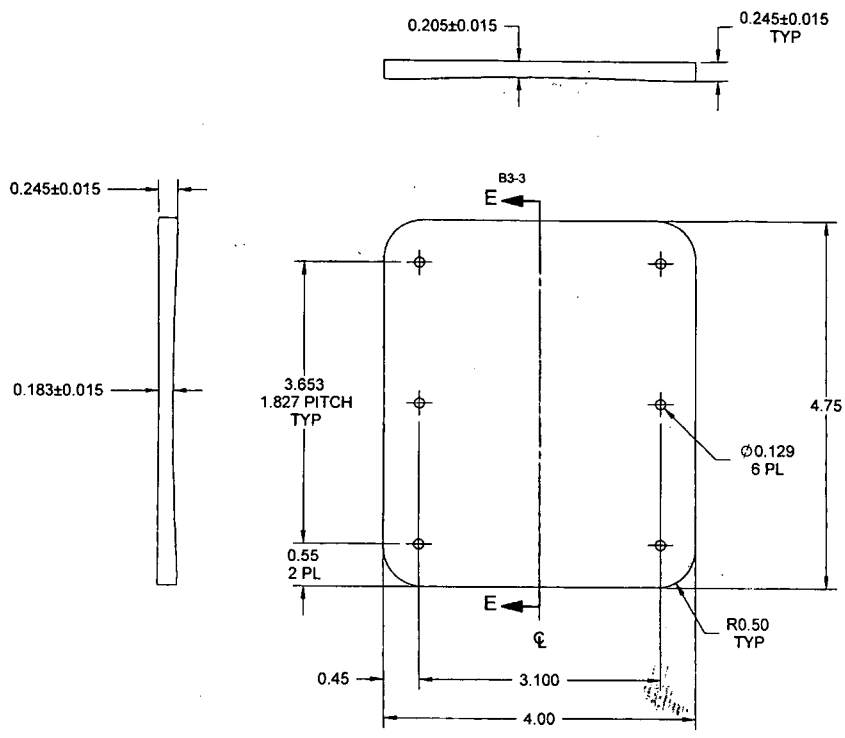
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A



u691811

SECTION A-A D6-3

D4102-3 SHIM

- NOTES:**
- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
PER DART SPEC. M6061T6B
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-3" & B/N USING FINE POINT PERMANENT INK MARKER
 - 7) WEIGHT: 0.31 lbs
 - 8) SURFACE FINISH MINIMUM 250 MICRINCH

RELEASED
2010-08-23
AM

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D4102	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SHIM	NTS
DATE	10.08.06	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries